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60/179,065	31 January 2000 (31.01.2000)	US	60/230,438	6 September 2000 (06.09.2000)	US
60/180,628	4 February 2000 (04.02.2000)	US	60/230,437	6 September 2000 (06.09.2000)	US
60/184,664	24 February 2000 (24.02.2000)	US	60/231,413	8 September 2000 (08.09.2000)	US
60/186,350	2 March 2000 (02.03.2000)	US	60/232,080	8 September 2000 (08.09.2000)	US
60/189,874	16 March 2000 (16.03.2000)	US	60/231,414	8 September 2000 (08.09.2000)	US
60/190,076	17 March 2000 (17.03.2000)	US	60/231,244	8 September 2000 (08.09.2000)	US
60/198,123	18 April 2000 (18.04.2000)	US	60/232,081	8 September 2000 (08.09.2000)	US
60/205,515	19 May 2000 (19.05.2000)	US	60/231,242	8 September 2000 (08.09.2000)	US
60/209,467	7 June 2000 (07.06.2000)	US	60/231,243	8 September 2000 (08.09.2000)	US
60/214,886	28 June 2000 (28.06.2000)	US	60/231,968	12 September 2000 (12.09.2000)	US
60/215,135	30 June 2000 (30.06.2000)	US	60/232,401	14 September 2000 (14.09.2000)	US
60/216,647	7 July 2000 (07.07.2000)	US	60/232,399	14 September 2000 (14.09.2000)	US
60/216,880	7 July 2000 (07.07.2000)	US	60/232,400	14 September 2000 (14.09.2000)	US
60/217,487	11 July 2000 (11.07.2000)	US	60/232,397	14 September 2000 (14.09.2000)	US
60/217,496	11 July 2000 (11.07.2000)	US	60/233,063	14 September 2000 (14.09.2000)	US
60/218,290	14 July 2000 (14.07.2000)	US	60/233,064	14 September 2000 (14.09.2000)	US
60/220,963	26 July 2000 (26.07.2000)	US	60/233,065	14 September 2000 (14.09.2000)	US
60/220,964	26 July 2000 (26.07.2000)	US	60/232,398	14 September 2000 (14.09.2000)	US
60/225,757	14 August 2000 (14.08.2000)	US	60/234,223	21 September 2000 (21.09.2000)	US
60/225,270	14 August 2000 (14.08.2000)	US	60/234,274	21 September 2000 (21.09.2000)	US
60/225,447	14 August 2000 (14.08.2000)	US	60/234,997	25 September 2000 (25.09.2000)	US
60/225,267	14 August 2000 (14.08.2000)	US	60/234,998	25 September 2000 (25.09.2000)	US
60/225,758	14 August 2000 (14.08.2000)	US	60/235,484	26 September 2000 (26.09.2000)	US
60/225,268	14 August 2000 (14.08.2000)	US	60/235,834	27 September 2000 (27.09.2000)	US
60/224,518	14 August 2000 (14.08.2000)	US	60/235,836	27 September 2000 (27.09.2000)	US
60/224,519	14 August 2000 (14.08.2000)	US	60/236,369	29 September 2000 (29.09.2000)	US
60/225,759	14 August 2000 (14.08.2000)	US	60/236,327	29 September 2000 (29.09.2000)	US
60/225,213	14 August 2000 (14.08.2000)	US	60/236,370	29 September 2000 (29.09.2000)	US
60/225,266	14 August 2000 (14.08.2000)	US	60/236,368	29 September 2000 (29.09.2000)	US
60/225,214	14 August 2000 (14.08.2000)	US	60/236,367	29 September 2000 (29.09.2000)	US
60/226,279	18 August 2000 (18.08.2000)	US			

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(54) Title: NUCLEIC ACIDS, PROTEINS, AND ANTIBODIES

(57) Abstract: The present invention relates to novel reproductive system related polynucleotides and the polypeptides encoded by these polynucleotides herein collectively known as "reproductive system related antigens", and the use of such reproductive system related antigens for detecting disorders of the reproductive system, particularly the presence of cancers and cancer metastases. More specifically, isolated reproductive system associated nucleic acid molecules are provided encoding novel reproductive system associated polypeptides. Novel reproductive system related polypeptides and antibodies that bind to these polypeptides are provided. Also provided are vectors, host cells, and recombinant and synthetic methods for producing human reproductive system associated polynucleotides and/or polypeptides. The invention further relates to diagnostic and therapeutic methods useful for diagnosing, treating, preventing and/or prognosing disorders related to the reproductive system, including reproductive system cancers, and therapeutic methods for treating such disorders. The invention further relates to screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention further relates to methods and/or compositions for inhibiting the production and function of the polypeptides of the present invention.

What Is Claimed Is:

1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 95% identical to a sequence selected from the group consisting of:

(a) a polynucleotide fragment of SEQ ID NO:X or a polynucleotide fragment of the cDNA sequence contained in Clone ID NO:Z, which is hybridizable to SEQ ID NO:X;

(b) a polynucleotide encoding a polypeptide fragment of SEQ ID NO:Y or a polypeptide fragment encoded by the cDNA sequence contained in cDNA Clone ID NO:Z, which is hybridizable to SEQ ID NO:X;

(c) a polynucleotide encoding a polypeptide fragment of a polypeptide encoded by SEQ ID NO:X or a polypeptide fragment encoded by the cDNA sequence contained in cDNA Clone ID NO:Z, which is hybridizable to SEQ ID NO:X;

(d) a polynucleotide encoding a polypeptide domain of SEQ ID NO:Y or a polypeptide domain encoded by the cDNA sequence contained in cDNA Clone ID NO:Z, which is hybridizable to SEQ ID NO:X;

(e) a polynucleotide encoding a polypeptide epitope of SEQ ID NO:Y or a polypeptide epitope encoded by the cDNA sequence contained in cDNA Clone ID NO:Z, which is hybridizable to SEQ ID NO:X;

(f) a polynucleotide encoding a polypeptide of SEQ ID NO:Y or the cDNA sequence contained in cDNA Clone ID NO:Z, which is hybridizable to SEQ ID NO:X, having biological activity;

(g) a polynucleotide which is a variant of SEQ ID NO:X;

(h) a polynucleotide which is an allelic variant of SEQ ID NO:X;

(i) a polynucleotide which encodes a species homologue of the SEQ ID NO:Y;

(j) a polynucleotide capable of hybridizing under stringent conditions to any one of the polynucleotides specified in (a)-(i), wherein said polynucleotide does not hybridize under stringent conditions to a nucleic acid molecule having a nucleotide sequence of only A residues or of only T residues.

2. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment comprises a nucleotide sequence encoding a protein.

3. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment comprises a nucleotide sequence encoding the sequence identified as SEQ ID NO:Y or the polypeptide encoded by the cDNA sequence contained in cDNA Clone ID NO:Z, which is hybridizable to SEQ ID NO:X.

4. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment comprises the entire nucleotide sequence of SEQ ID NO:X or the cDNA sequence contained in cDNA Clone ID NO:Z, which is hybridizable to SEQ ID NO:X.

5. The isolated nucleic acid molecule of claim 2, wherein the nucleotide sequence comprises sequential nucleotide deletions from either the C-terminus or the N-terminus.

6. The isolated nucleic acid molecule of claim 3, wherein the nucleotide sequence comprises sequential nucleotide deletions from either the C-terminus or the N-terminus.

7. A recombinant vector comprising the isolated nucleic acid molecule of claim 1.

8. A method of making a recombinant host cell comprising the isolated nucleic acid molecule of claim 1.

9. A recombinant host cell produced by the method of claim 8.

10. The recombinant host cell of claim 9 comprising vector sequences.

11. An isolated polypeptide comprising an amino acid sequence at least 90% identical to a sequence selected from the group consisting of:

(a) a polypeptide fragment of SEQ ID NO:Y or the encoded sequence contained in cDNA Clone ID NO:Z;

(b) a polypeptide fragment of SEQ ID NO:Y or the encoded sequence contained in cDNA Clone ID NO:Z, having biological activity;

(c) a polypeptide domain of SEQ ID NO:Y or the encoded sequence contained in cDNA Clone ID NO:Z;

(d) a polypeptide epitope of SEQ ID NO:Y or the encoded sequence contained in cDNA Clone ID NO:Z;

(e) a full length protein of SEQ ID NO:Y or the encoded sequence contained in cDNA Clone ID NO:Z;

(f) a variant of SEQ ID NO:Y;

(g) an allelic variant of SEQ ID NO:Y; or

(h) a species homologue of the SEQ ID NO:Y.

12. The isolated polypeptide of claim 11, wherein the full length protein comprises sequential amino acid deletions from either the C-terminus or the N-terminus.

13. An isolated antibody that binds specifically to the isolated polypeptide of claim 11.

14. A recombinant host cell that expresses the isolated polypeptide of claim 11.

15. A method of making an isolated polypeptide comprising:

(a) culturing the recombinant host cell of claim 14 under conditions such that said polypeptide is expressed; and

(b) recovering said polypeptide.

16. The polypeptide produced by claim 15.

17. A method for preventing, treating, or ameliorating a medical condition, comprising administering to a mammalian subject a therapeutically effective amount of the polynucleotide of claim 1.

18. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:

(a) determining the presence or absence of a mutation in the polynucleotide of claim 1; and

(b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or absence of said mutation.

19. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:

(a) determining the presence or amount of expression of the polypeptide of claim 11 in a biological sample; and

(b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or amount of expression of the polypeptide.

20. A method for identifying a binding partner to the polypeptide of claim 11 comprising:

(a) contacting the polypeptide of claim 11 with a binding partner; and

(b) determining whether the binding partner effects an activity of the polypeptide.

21. The gene corresponding to the cDNA sequence of SEQ ID NO:Y.

22. A method of identifying an activity in a biological assay, wherein the method comprises:

(a) expressing SEQ ID NO:X in a cell;

(b) isolating the supernatant;

(c) detecting an activity in a biological assay; and

identifying the protein in the supernatant having the activity.

23. The product produced by the method of claim 20.

24. A method for preventing, treating, or ameliorating a medical condition, comprising administering to a mammalian subject a therapeutically effective amount of the polypeptide of claim 11.